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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/857,688 | 10/03/2001 | John Coogan | 024444-938 | 6445 |

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EXAMINER

TRUONG, THANH K

ART UNIT PAPER NUMBER

3721

17

DATE MAILED: 03/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/857,688

Applicant(s)

COOGAN ET AL.

Examiner

Thanh K Truong

Art Unit

3721

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 15-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 15-37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. This action is in response to applicant's amendment, Paper No. 16, received on December 12, 2003.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 25, 26 and 36 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The recitations: "a function of the positions of two joints, in crossing position to one another" (in claim 25); "a function of the positions of the crossing joints" (in claim 26); and "a function of the positions of two crossing joints". There is no support in the specification for such limitation as claimed.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 15-37 are rejected under 35 U.S.C. 102(b) as being anticipated by Rinnemaa (5,383,524).

Rinnemaa discloses a method and apparatus for correcting positioning error in rock drilling comprising: a carrier 1; a boom 3 attached turnable about joints 2 in relation to the carrier; rock drill 6; joint sensors 7; control device 14; a memory and calculating device 8, 13. The deviation of the boom position from the theoretical position is measured at predetermined intervals (inherently discloses) as a function of the position of boom joint, and the position is corrected on the basis of the stored deviation that corresponds to the position of the joint corresponding to the drilling position (column 2, lines 62-68 and column 3, lines 1-5).

Rinnemaa further discloses that the deviation of the boom position from the calculated theoretical position is measured as a function of both angles, in horizontal and vertical directions, in a two-dimensional coordinate system, the deviation is defined as a function of the positions of the crossing points (column 3, lines 58-68 and column 4, lines 1-4).

The deviations corresponding to each joint position are measured in a certain joint position value and the calculated theoretical position of the boom is corrected on the basis of the deviations corresponding to the joint positions obtained in this way (column 3, lines 10-16).

Rinnemaa also discloses that the deviation values stored in a memory (column 7, lines 54-59); and an outer section of the boom is linearly extendable and retractable relative to the inner section (column 7, line 68 and column 8, line 1).

Response to Arguments

6. Applicant's arguments filed December 12, 2003 have been fully considered but they are not persuasive.

In response to Applicant's argument that "Rinnemaa does not disclose a method for correcting positioning errors in rock drilling wherein a first set of deviations are stored in a memory, and the first set of deviations are obtained by turning the boom through incremental tuning angles about one of said joint axes from a reference position to predetermined angularly spaced intervals about said one of said joint axes, and measuring using a movement sensor, for each such interval, a deviation of the boom position from a desired incremental turning angle. Rinnemaa also does not disclose using the above described stored first set of deviations during a subsequent drilling operation as correction values for locating the boom at the desired incremental turning angles corresponding to the respective predetermined angularly spaced intervals about said one of said joint axes.", the examiner disagrees. Rinnemaa discloses an apparatus and method in which sets of deviation are collected and saved in memory (column 7, lines 54-59); deviation implied the different between theoretical values and actual value, and the data that is stored in memory implied that the store data is used to calculate the next set of value. These methods are well known in the art. The deviation collected is feed back to the next calculation to reduce error (column 2, lines 62-68 and column 3, lines 1-5).

Conclusion

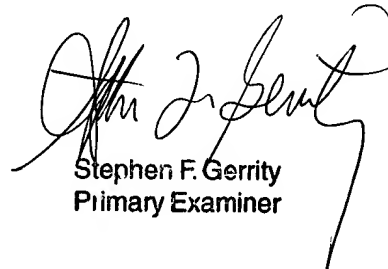
7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanh K Truong whose telephone number is (703) 605-0423. The examiner can normally be reached on Mon-Thurs from 8:00 AM to 6:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rinaldi I Rada can be reached on (703) 308-2187. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

tkf
March 17, 2004.



Stephen F. Gerrity
Primary Examiner